
SECTION B

MAPPING OF USER SERVICES TO IVHS TECHNOLOGIES

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[illegible]

USER SERVICE	TRAVELER INTERFACE						
	Touch Screen	Keypad/ keyboard	Voice recognition	Voice output	Visual display	Heads up display	Variable Message signs
Traveler Information (multimodal)							
Traveler advisory				x	x	x	x
Traveler service information	x	x	x		x		
Trip planning	x	x	x	x	x	x	
Location displays					x	x	
Route selection	x	x	x				
Route guidance				x	x	x	
In-Vehicle signing				x	x	x	
Traffic Management							
Incident detection & management							x
Demand management							
Traffic network monitoring							
Traffic control (adaptive strat.)							
Parking management	x	x		x	x	x	x
Construction management				x		x	x
Electronic Toll collection							
Freight & Fleet Management							
Inter-modal transport planning							
Route planning & scheduling	x	x			x		
HAZMAT monitoring & tracking							
Vehicle & cargo monitoring							
Law enforcement							
Regulatory Support							
Public Trans. & Emer. Veh. Management							
Planning & scheduling systems	x	x			x		
Signal pre-emption traffic control							
Automatic payment (Flex. fares)							
Dynamic ride sharing	x	x		x	x		
Prediction of Arrivals	x	x		x	x		
Emergency serv. sys. management	x	x		x	x		

USER SERVICE	NAVIGATION / GUIDANCE						
	Position display	Guidance display	Map database	Dead reckoning	LORAN	GPS	Map matching
Traveler Information (multimodal)							
Traveler advisory	x						
Traveler service information	x						
Trip planning	x	x	x				
Location displays	x		x	x	x	x	x
Route selection							
Route guidance	x	x	x	x	x	x	x
In-Vehicle signing	x	x					
Traffic Management							
Incident detection & management							
Demand management							
Traffic network monitoring							
Traffic control (adaptive strat.)							
Parking management	x		x				
Construction management							
Electronic Toll collection							
Freight & Fleet Management							
Inter-modal transport planning							
Route planning & scheduling	x		x	x	x	x	x
HAZMAT monitoring & tracking	x		x	x	x	x	x
Vehicle & cargo monitoring	x		x	x	x	x	x
Law enforcement							
Regulatory Support							
Public Trans. & Emer. Veh. Management							
Planning & scheduling systems							
Signal pre-emption traffic control							
Automatic payment (Flex. fares)							
Dynamic ride sharing							
Prediction of Arrivals	x		x	x	x	x	x
Emergency serv. sys. management	x	x	x	x	x	x	x

USER SERVICE	DATA PROCESSING										
	Coupleted rt. sel. & traff. control	Database static	Database dynamic	Route sel. alg.	Driver/ veh./cargo sched.	Real-time traffic pred.	Assign sign.	Route guidance alg.	Data Fusion tech	Opt. control strat.	Inc. detec. sig.
Traveler Information (multimodal)											
Traveler advisory			x						x		
Traveler service Information		x	x						x		
Trip planing		x	x						x		
Location displays											
Route selection	x	x	x	x		x			x		
Route guidance		x	x					x			
In-Vehicle signing											
Traffic Management											
Incident detection & management	x	x	x						x	x	x
Demand management		x	x							x	
Traffic network Monitoring		x	x						x		x
Traffic Control (Adaptive strat.)	x	x	x	x		x	x			x	
Parking Management		x	x								
Construction Management			x						x		
Electronic Toll Collection											
Freight & Fleet Management											
Inter-model transport planning		x	x	x	x						
Route planning & scheduling			x	x	x	x	x				
HAZMAT monitoring & tracking			x						x		
Vehicle & cargo monitoring			x						x		
Law enforcement											
Regulatory support											
Pub. Trans. & Emer. Veh. Management											
Planning & scheduling systems			x	x	x	x	x	x			
Signal pre-emption traffic control											
Automatic payment (Flex. fares)											
Dynamic ride sharing			x				x				
Prediction of arrivals		x	x			x					
Emergency serv. sys management				x	x		x	x		x	

USER SERVICE	IN-VEHICLES SENSORS				
	Equipment status Sensors	Vehicle headway sensors	Odometers	Electronic compass	Driver fatigue & performance monitoring
Traveler Information (multimodal)					
Traveler advisory					
Traveler service information					
Trip planning					
Location displays					
Route selection			x	x	
Route guidance					
In-Vehicle signing	x	x	x	x	x
Freight & Fleet Management					
Inter-modal transport planning					
Route planning & scheduling					
HAZMAT monitoring & tracking	x	x	x	x	x
Vehicle & cargo monitoring	x	x	x	x	x
Law enforcement					x
Regulatory Support					x
Public Trans. & Emer. Veh. Management					
Planning & scheduling systems					
Signal pre-emption traffic control					
Automatic payment (Flex. fares)					
Dynamic ride sharing					
Prediction of Arrivals			x	x	
Emergency serv. sys. management					

USER SERVICE	COMM. <i>Within infrastructure</i>					VEHICLE TO VEHICLE	
	Land lines	Microwave	Wide-area Radio System two-way	Satellite two-way		Microwave	Wide-area radio system two-way
Traveler Information (multimodal)							
Traveler advisory	x	x	x	x		x	x
Traveler service information	x						
Trip planning	x	x	x	x		x	x
Location displays							
Route selection	x						
Route guidance							
In-Vehicle signing	x					x	x
Traffic Management							
Incident detection & management	x	x				x	x
Demand management							
Traffic network monitoring	x	x	x	x			
Traffic control (adaptive strat.)	x	x	x				
Parking management							
Construction management	x	x	x	x			
Electronic Toll collection	x						
Freight & Fleet Management							
Inter-modal transport planning	x						
Route planning & scheduling							
HAZMAT monitoring & tracking	x						
Vehicle & cargo monitoring							
Law enforcement	x					x	x
Regulatory Support							
Public Trans. & Emer. Veh. Management							
Planning & scheduling systems	x	x	x				

USER SERVICE	CONTROL STRATEGIES						
	Ramp Metering	HOV restriction	Signal control	Parking restriction	Ramp / lane closures	Road use pricing	Reversible lanes
Traffic Management							
Incident detection & management		x	x		x		x
Demand management	x	x	x	x	x	x	x
Traffic network monitoring							
Traffic control (adaptive strat.)	x	x	x	x	x	x	x
Parking management				x			
Construction management			x	x	x		
Electronic Toll collection						x	
Public Trans. & Emer. Veh. Management							
Planning & scheduling systems							
Signal pre-emption traffic control			x				